

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 09/740,823
Attorney Docket No.: Q62379

Claims Rejections under 35 U.S.C. § 102

Claims 1-14 are rejected under 35 U.S.C. § 112, first paragraph. In particular, the Examiner alleges that the added feature of “wherein each of said software agents comprises at least a piece of an object code of a distributed computing that is at least partially independent” to claims 1 and 7 is not supported by the specification and accordingly, is not accorded patentable weight (*see* page 2 of the Office Action). Applicant respectfully traverses in view of the following comments.

This rejection is not understood by the Applicant. The specification discloses that the term “‘agent’ or ‘software agent’ is used to designate any piece of object code that is to some extent autonomous and independent” (*see* page 1, lines 9 to 11) and “these software agents can be agents proper, i.e. independent software entities, having their own execution resources or ‘threads’ available to them” (*see* page 3, lines 33 to 37). Furthermore, the specification discloses that the present invention relates to “a system enabling the communication means used between two software agents within a distributed architecture to be changed in a dynamic manner” (*see* page 1, lines 1 to 6). Finally, the specification further discloses that “in present-day distributed software architectures, software agents communicate with one another...” (*see* page 1, lines 14 to 18). These are provided by way of an example only to illustrate that the specification provides ample support for the wherein clause set forth in claims 1 and 7.

Accordingly, Applicant respectfully submits that this rejection should be withdrawn. Moreover, it was inappropriate for the Examiner not to accord the added feature patentable weight.

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 09/740,823
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Claims Rejections under 35 U.S.C. § 102

Claims 1-6, 12, and 13 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,948,069 to Kitai et al. (hereinafter “Kitai”). Applicant respectfully traverses this rejection in view of the following comments.

First, Applicant respectfully notes that this rejection is word for word identical to the Examiner’s rejection in the Non-Final Office Action dated November 5, 2004. In addition, there is no section responding to Applicant’s arguments. In other words, Applicant’s arguments stand unrebutted. Accordingly, Applicant incorporates by reference arguments presented in the Amendment under 37 C.F.R. § 1.111 filed on February 5, 2005.

To be an “anticipation” rejection under 35 U.S.C. § 102, the reference must teach every element and recitation of the Applicant’s claims. Rejections under 35 U.S.C. § 102 are proper only when the claimed subject matter is identically disclosed or described in the prior art. Thus, the reference must clearly and unequivocally disclose every element and recitation of the claimed invention.

Of these rejected claims, only claim 1 is independent. Among a number of unique features, claim 1 recites: “each of said software agents comprises at least a piece of an object code of a distributed computing that is at least partially independent and wherein said software agents use the communication means to communicate with each other.” The Examiner asserts that claim 1 is directed to a system for changing the communication means and is anticipated by the teachings of Kitai.

The Examiner asserts that the software agents communicating with each other as set forth in claim 1 are equivalent to Kitai’s client computer and Kitai’s server and the programs running

on these hardware devices (*see* page 3 of the Office Action). Applicant has carefully studied Kitai's discussion of the communication between the client computer and the server, which is not similar to the software agents communicating with each other, where each software agent has at least a piece of an object code of a distributed computing that is at least partially independent.

The Examiner alleges that the software agents that communicate with each other are disclosed in col. 2, lines 24 to 38 of Kitai, which recites:

The above described conventional technology has disadvantages being that it is impossible to dynamically select a network interface and balance the load in accordance with the load state of the network interface in the case of data communication between a client and the server because only one network interface connected with the client can be used though a plurality of network interfaces of the server are present. Thus, various kinds of quality of service (QOS) of the client cannot be satisfied. For example, when there is a requirement to communicate multimedia data such as voices, images, or data have increased recently, it is difficult to meet the quality of service (QOS) requested by clients because a considerably large capacity is necessary and thereby, a load is concentrated on one network interface.

That is, the only entities disclosed in the above-cited passage of Kitai are computer clients and a computer server. A client is a workstation or PC (col. 1, lines 19 to 23 and col. 5, lines 58 to 61) and a server is a computer such as a workstation or a parallel processor (col. 5, lines 39 to 42). That is, both the clients and the server are hardware and cannot be compared to software agents.

Indeed, Kitai relates to communication between different hardware devices and not software agents.

Moreover, the above noted passage of Kitai only describes the problem of not being able to dynamically select a network interface and balance the load in accordance with the load state of the network interface in the case of data communication between a client and a server because only one network interface connected with the client can be used though a plurality of network interfaces of the server are present (col. 2, lines 26 to 33). Kitai discloses a server having a number of network interfaces. The server provides for communication with the client via a number of interfaces in parallel so as to provide satisfying quality of service (QoS) (col. 2, lines 50 to 59). However, these interfaces relate to the communication between two computer and not two software agents. In short, the above-cited passage does not teach or suggest the software agents using communication means to communicate with each other.

The Examiner further alleges that the “client and the program running on the client” is equivalent to “a software agent” as set forth in claim 1 (*see* page 3 of the Office Action). For support, the Examiner further turns to col. 6, lines 37 to 47 of the specification, which recite:

[n]umerals 9001 to 9015 represent instructions of the program to be executed by the server 3000 and 9050 to 9061 represent instructions of the program to be executed by the client 3101. The server 3000 **performs generation of a socket (9002) and addressing of the socket**, and thereafter, waits for a request for establishing a connection from any client (9004) in accordance with a listen() call (9007). The client 3101 **generates a socket (9053) and thereafter, specifies net1.19 (9051) which is one of the network addresses of the**

server 3000 (9055) to request establishing a connection with the server in accordance with a connect() call (9058), emphasis added.

That is, above-cited passage of Kitai discloses instructions of the program executed by the server and the client to perform generation of a socket and addressing of the socket. This software code is not for communicating with each other and does not have a communication module. That is, it is not the instructions that generate the sockets that communicate with each other but rather the client computer and the server. In Kitai, the software code, (the program) is used to provide communication between the server and the client computer. In Kitai, it is not the programs that are communicating with each other but, as is visible from Fig. 16, the programs are directed to establishing a connection, e.g., by identifying the socket. This connection, established by the exemplary program, is for communication between the client computer and the server, two hardware devices. In short, this software code is for facilitating the communication between the client computer and the server. In other words, Kitai is not related to a distributed computing and does not address communication between software objects or containers. Kitai only teaches communication between the server and the client.

Finally, Kitai does not teach or suggest communication between the software agents, where the agent is piece of an object code at least partially independent. Kitai only relates to the communication between the client computer and the server computer and not to a communication between the software agents.

Therefore, “each of said software agents comprises at least a piece of an object code of a distributed computing that is at least partially independent and wherein said software agents use

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 09/740,823
Attorney Docket No.: Q62379

the communication means to communicate with each other,” as recited in claim 1 is not disclosed by Kitai, which lacks having software agents comprising of a piece of an object code of a distributed computing that is at least partially independent and which lacks teaching communication between the software agents.

For at least these exemplary reasons, Applicant respectfully submits that independent claim 1 is patentably distinguishable from Kitai. Applicant therefore respectfully requests the Examiner to withdraw this rejection of independent claim 1. Also, Applicant respectfully submits that claims 2-6, 12, and 13 are allowable at least by virtue of their dependency on claim 1.

Claim Rejections under 35 U.S.C. § 103

Claims 7-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,069,947 to Evans et al. (hereinafter “Evans”) and claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Evans and Kitai, and further in view of U.S. Patent No. 6,772,190 to Hodjat et al. (hereinafter “Hodjat”). Applicant respectfully traverses these rejections in view of the following comments.

Claim 7, among a number of unique features, recites: “said software agents using said communication modules to continue communicating with each other, wherein each of said software agents comprises at least a piece of an object code of a distributed computing that is at least partially independent.” This recitation of claim 7 is somewhat similar to the features argued above with respect to claim 1. Therefore, arguments submitted with respect to claim 1 apply with equal force here.

Evans does not cure the deficient teachings of Kitai. In fact, the Examiner acknowledges that Evans does not teach or suggest the above-identified exemplary features of claim 7 (see page 5 of the Office Action). Evans is only cited for its teaching of detecting a failure (see page 5 of the Office Action). As such, Evans does not cure the deficient teachings of Kitai.

Moreover, the Examiner alleges that one of ordinary skill in the art would have been motivated to combine the references in order to “maintain the balance of network load in an event of a failure” (see pages 6-7 of the Office Action). Kitai, however, is related to providing various communication paths for quality of service. Evans, on the other hand, relates to interconnecting a narrowband communication network with a broadband communication network (col. 1, lines 26 to 67). One of ordinary skill in the art confronted with a problem of Kitai would not have turned to the unrelated teaching of Evans. In short, there is no motivation to combine the references in the manner suggested by the Examiner.

Moreover, Applicant’s arguments stand unrebutted. Applicant respectfully notes that this argument is never addressed in the Final Office Action mailed May 5, 2005. That is, this rejection is word for word identical to the Examiner’s rejection in the Non-Final Office Action dated November 5, 2004.

For at least these exemplary reasons, Applicant respectfully submits that claim 7 is patentable over Kitai in view of Evans. It is appropriate and necessary for the Examiner to withdraw this rejection of claim 7. Claims 8-11 are patentable at least by virtue of their dependency on claim 7.

Finally, the previously added dependent claim 14 is rejected as being obvious over Kitai, Evans, and Hodjat. Claim 14 depends on claim 7. Hodjat does not cure the deficient teachings of Kitai and Evans with respect to claim 7. Accordingly, claim 14 is patentable at least by virtue of its dependency on claim 7.

Moreover, with respect to claim 14, the Examiner appears to now acknowledge that Kitai and Evans fail to teach or suggest the software agents directly communicating with each other and are at a location remote from the communication server, and wherein the server is contacted to obtain the new communication module for direct communication between the software agents (*see* pages 8-9). The Examiner, however, now alleges that Hodjat cures the deficient teachings of the combined teachings of Kitai and Evans (*see* page 9 of the Office Action). Applicant respectfully disagrees at least for the following reasons.

Hodjat is no different from the conventional techniques. Hodjat discloses method and agent network architecture for processing a subject message, where each agent has a view of its own domain of responsibility. Hodjat discloses an initiator agent receives a user-input request and does not itself have a relevant interpretation policy, queries its downchain agents whether the queried agent considers such message to be in its domain of responsibility. Each queried agent recursively determines whether it has an interpretation policy of its own that applies to the request, and if not, further queries its own further downchain neighboring agents. The further agents eventually respond to such further queries, thereby allowing the first-queried agents to respond to the initiator agent. In Hodjat, the recursive invocation of this procedure ultimately

determines one or more paths through the network from the initiator agent to one more leaf agents (*see* Abstract and col. 5, lines 1 to 26).

Hodjat, however, is no different from the conventional techniques at least because it fails to teach or suggest contacting the server to obtain the new communication module for direct communication between the software agents. The Examiner relies on col. 5, lines 1 to 5 of Hodjat and col. 14, lines 20 to 39 of Hodjat. Col. 5, lines 1 to 5 of Hodjat recites: “[a]n initiator agent which receives a user-input request and does not itself have a relevant interpretation policy, queries its downchain agents whether the queried agent considers such message, or part of such message, to be in its domain of responsibility.” This is no different from the conventional techniques of having agents communicate with each other. The above-cited passage of Hodjat, however, fails to teach or suggest contacting the server to obtain a new communication module.

Similarly, col. 14, lines 20 to 39 of Hodjat recite:

The various agents in the agent-oriented interpretation unit 212 receive and reply to messages using a conventional declarative knowledge representation language known as KIF (Knowledge Interchange Format), a conventional communication language KQML (Knowledge Query and Manipulation Language) and a library of formal ontologies defining the vocabulary of various domains. KQML is described in the KQML 1993 reference incorporated above. KQML is a standard language for programs to use to communicate attitudes about information, such as querying, stating, believing, requiring, achieving, subscribing, and offering. KQML messages (also called “performatives”) include a number of fields, including a

message-content field and a field indicating what the recipient is supposed to do with the information in the message-content field. The present embodiment extends KQML by adding a number of new performatives as follows. These performatives are all general and therefore pre-implemented in the white box modules of these agents.

That is, the above-cited passage of Hodjat only discloses that KIF is used for communicating attitudes about information such as querying and so on. The above-noted passage fails to teach or suggest contacting the server to obtain a new communication module.

Moreover, Applicant respectfully submits that one of ordinary skill in the art would not have been motivated to combine these three references. Kitai relates to providing various communication paths for quality of service between the server computer and the client computer. Evans, on the other hand, relates to interconnecting networks i.e., a narrowband communication network with a broadband communication network (col. 1, lines 26 to 67). Hodjat relates to agent network architecture for processing a subject message, where each agent has a view of its own domain of responsibility. One of ordinary skill in the art confronted with a problem of Kitai would not have turned to the unrelated teaching of Evans and/or the unrelated teachings of Hodjat. Moreover, one of ordinary skill in the art would not know how to combine these three very different references. In short, there is no motivation to combine the references in the manner suggested by the Examiner. For at least these additional reasons, claim 14 is patentable over Kitai, Evans, and Hodjat.

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 09/740,823
Attorney Docket No.: Q62379

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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23373

CUSTOMER NUMBER

Date: August 4, 2005

Attorney Docket No.: Q62379